Field Oversight Activities Report
Monitoring Well Installation/Ground Water Sampling
(21 May – 6 June 2007)

Gulfco Marine Maintenance Site
Freeport, Brazoria County, Texas
EPA Identification No. TXD055144539

Remedial Action Contract 2 Full Service
Contract: EP-W-06-004
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Prepared for

U.S. Environmental Protection Agency
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1.0 INTRODUCTION

This Field Oversight Activities Report summarizes remedial investigation/feasibility study (RI/FS) oversight activities conducted from 21 May – 6 June 2007 at the Gulfco Marine Maintenance (Gulfco) Superfund site, located in Freeport, Brazoria County, Texas. As requested by the U.S. Environmental Protection Agency (EPA), EA Engineering, Science, and Technology, Inc. (EA) performed oversight of the ground water program conducted by the potentially responsible party (PRP)'s primary consultant, Pastor, Behling & Wheeler, LLC (PBW). Additionally, EA obtained split samples of ground water, as directed by EPA.

According to EA oversight personnel, PBW performed field activities in accordance with applicable standard operating procedures (SOPs) and the following EPA-approved plans:

- PBW's RI/FS Work Plan (May 2005)
- PBW's Sampling and Analysis Plan (SAP) (May 2006)
- PBW's Memorandum: "Groundwater Data" (19 January 2007)
- EPA's Memorandum: "Groundwater Data and Proposed Monitoring Wells" (14 February 2007)

Section 2 summarizes the May 2007 field program associated with monitoring well installation, completion, and development. Section 3 summarizes the June 2007 ground water split sampling activities.

2.0 MONITORING WELL INSTALLATION, COMPLETION, AND DEVELOPMENT

From 21 May – 1 June 2007, EA conducted oversight of the monitoring well installation, completion, and development activities performed by PBW and its drilling subcontractor, Master Monitoring Services (MMS). Participants included:

- Mr. Gary Miller, EPA
- Ms. Luda Voskov, Texas Commission on Environmental Quality (TCEQ)
- Mr. Donnie Belote, Dow Chemical (Dow)
- Mr. Eric Pastor, PBW
- Mr. Tim Jennings, PBW
- Mr. Len Mason, PBW
- Mr. Benito (Benny) Guillen, MMS
- Mr. Carlos Diaz, MMS
- Mr. Joel Miranda, MMS
- Mr. Juan Miranda, MMS
- Mr. Ramon Tapia, MMS
- Mr. John Woolsey, MMS
- Mr. Lucien Zamora, MMS
- Mr. Mark Kelly, EA

Table 1 summarizes the new monitoring well construction details.

TABLE 1 NEW MONITORING WELL CONSTRUCTION SUMMARY

Well ID	Well Diameter (inches)	Well Casing Material	Total Depth (feet bgs)	Screened Interval (feet bgs)	Completion Date
Zone A Shallow Monitoring Wells					
NB4MW18	2	PVC	18	8 - 18	5/30/2007
NG3MW19	2	PVC	14	4 - 14	5/23/2007
OMW20	2	PVC	16	6 - 16	5/24/2007
OMW21	2	PVC	18	8 - 18	5/21/2007
SA4MW22	2	PVC	15	5 - 15	5/30/2007
NC2MW28A	2	PVC	15	5 - 15	5/25/2007
ND3MW29A	2	PVC	17.5	7.5 - 17.5	5/31/2007
Zone B Deep Monitoring Wells					
NC2MW23B	- -	- -	40	P&A	5/31/2007
ND4MW24B	2	PVC	26.5	21.5 - 26.5	5/29/2007
NG3MW25B	2	PVC	26	16 - 26	5/30/2007
OMW26B	- -	- -	40	P&A	5/30/2007
OMW27B	2	PVC	30	20 - 30	5/29/2007

Notes:
- - Not applicable; well was plugged and abandoned (P&A).
bgs Below ground surface
PVC Polyvinyl chloride

2.1 Site Activities – 21 May 2007

At 1130 hours, EA arrived at the Gulfco site to conduct oversight of monitoring well installation activities scheduled for that afternoon. EA met with Dow (Donnie Belote), PBW (Eric Pastor, Tim Jennings, and Len Mason) and MMS (Benny Guillen) representatives, who were awaiting the MMS drilling crew in order to conduct the safety briefing.

Weather: light rain earlier, overcast, southerly wind at 10 miles per hour (mph), with temperature ranging from 70 – 80°F.

By 1330 hours, only one MMS drilling crew (three personnel) had arrived, although two drilling rigs had already been mobilized to the site. Dow conducted the safety briefing and issued Safety Task Analysis Cards (STAC) to all participants.

At 1430 hours, PBW established that only one drilling crew would be available this week; the second drilling crew would not be available until the following week. PBW demobilized a field geologist and associated rental equipment from the site that would have been directing the

second MMS drilling crew. Following the Dow STAC meeting, PBW conducted a daily tailgate safety meeting.

PBW discussed proposed activities, which included the following general procedures:

- Zone A (shallow) wells would typically be installed using 2-inch-diameter PVC well casing to a total depth of 18 – 20 feet bgs; core barrels would be used to collect lithologic samples.
- Zone B (deep) wells would typically be installed using 2-inch-diameter PVC well casing to a total depth of about 50 feet bgs.
  - Prior to installing well casing, 8-inch-diameter PVC surface casing would be set to a total depth of 18 – 20 feet bgs to seal off the shallow water-bearing zone (WBZ), then grouted with Portland cement and Quick Gel (Baroid®) with a tremie pipe.
  - Lithologic samples would only be collected to this depth in the case where lithology for a nearby Zone A (shallow) well was not available.
  - Once the surface casing grouting had cured sufficiently, drilling would continue within the surface casing to total depth; core barrels would be used to collect lithologic samples.

At 1550 hours, MMS began constructing the decontamination (decon) area (Appendix A, Photograph 34) and prepared the all-terrain "buggy" hollow-stem auger (HSA) drilling rig and support vehicle for drilling activities.

At 1640 hours, MMS set up the buggy rig at monitoring well location **OMW21**, which is proposed as a Zone A (shallow) well (Appendix A, Photograph 1). At 1710 hours, MMS pushed the first 5-foot-long core barrel (Appendix A, Photographs 2 – 4). During drilling activities, PBW monitored the work area and the in-ground HSAs for volatile organic compounds (VOCs) using a MiniRae® 2000 photo-ionization detector (PID) (Appendix A, Photograph 5). Based on lithologic interpretation of the soil cores, PBW directed MMS to stop drilling OMW21 at a total depth of 18 feet bgs. MMS set the 2-inch PVC well casing at a total depth of 18 feet bgs with a 10-foot screen (screened from 8 to 18 feet bgs).

At 1900 hours, after recovering the drill rod that had been dropped down the well, MMS set the well casing and poured the sand and bentonite chips around the casing annulus (Appendix A, Photographs 6 – 7). MMS cut the well casing flush with the ground surface, which caused PBW some concern about the possibility of rainfall and storm water infiltration. MMS sealed the well with a "J-plug" and agreed to locate coupling to extend the height of the OMW21 well casing above ground surface.

At 2000 hours, EA departed the site.

2.2 Site Activities – 22 May 2007

At 0845 hours, EA arrived at the Gulfco site; PBW was already on site and waiting for the MMS crew, who were based in Houston, Texas. Heavy rainfall had been occurring since sunrise. According to PBW, once MMS arrived on site and it stopped raining, they would evaluate access to OMW21. If rainfall continued, they would attempt to work in a more accessible area of the site closer to Marlin Avenue.

At 1040 hours, the rain ceased and PBW indicated that they would attempt to initiate drilling activities.

Weather: mostly to partly cloudy, 10 – 15 mph southerly winds, temperature about 70°F.

At 1115 hours, PBW and MMS mobilized to proposed well location OMW27B, which is proposed as a Zone B (deep) well and is located immediately adjacent to OMW21. Upon arrival, EA observed that OMW21 was under water. After bailing water out of the well, MMS installed 3 – 4 feet PVC with coupling to extend the well casing above ground surface; no glue or adhesive was used that may have compromised ground water quality within the well (Appendix A, Photographs 8 – 9).

At 1215 hours, EPA arrived on site. PBW discussed decreasing the concrete well pad dimensions from 4-foot square to 2-foot-diameter, as cited by PBW according to the Texas Water Well Drillers (WWD) regulations. EPA indicated that they had no issue with decreasing the well pad dimensions as long as TCEQ concurred and it complied with the Texas WWD regulations.

At 1245 hours, MMS began drilling **OMW27B** with the HSA buggy rig after resolving some equipment issues (Appendix A, Photographs 11 – 12). At the direction of PBW, MMS only drilled down to about 20 feet bgs using a 12-inch outside diameter (OD) HSA (8-inch inside diameter [ID]); no lithologic sampling was conducted due to the proximity of OMW21. At 1430 hours, MMS set the 8-inch-diameter PVC surface casing to a total depth of 18 feet bgs (Appendix A, Photographs 13 – 14); MMS then grouted the annulus of the surface casing for OMW27B down to 18 feet bgs and added another 2 – 3 feet of grout to OMW21 (Appendix A, Photograph 15). Once the grout has cured, PBW and MMS would return to OMW27B and drill down to Zone B within the surface casing.

At 1620 hours, MMS mobilized its equipment to the decon area.

At 1700 hours, EPA, PBW, and EA reconnoitered alternate well locations due to standing water in the proposed locations.

At 1740 hours, EPA and EA departed the site.

2.3 Site Activities – 23 May 2007

At 0800 hours, EPA, TCEQ, and EA arrived at the Gulfco site, where PBW and MMS were conducting a safety briefing.

Weather: cloudy, 10 – 15 mph southerly winds, slightly humid with temperature about 75°F.

At about 0900 hours, MMS began drilling at deep well location **ND4MW24B** using the 12-inch OD HSA (8-inch ID) (Appendix A, Photographs 16 – 17). At 1015 hours, MMS set the 8-inch-diameter surface casing to 19 feet bgs and then grouted the annulus using a tremie pipe (Appendix A, Photographs 18 – 19).

At 1345 hours, MMS began drilling at shallow well location **NG3MW19** using the smaller 8-inch OD HSA (4¼-inch ID) (Appendix A, Photographs 20 – 22). At a depth of 15 feet bgs, MMS stopped drilling to evaluate lithologic samples in core barrels. PBW noted a saturated sand at the top of the 10- to 15-foot bgs interval, with wet silty, sandy clay throughout. PBW directed MMS to drill down another 2 feet with the next core barrel. In the 15- to 17-foot bgs interval, PBW noted clay from 15 – 16 feet bgs and small coarse sand mixed with shell hash from 16 – 17 feet bgs. PBW then directed MMS to fill the borehole with bentonite pellets (PelPlug®) from total depth to 14 feet bgs in order to seal off the lower sand encountered below 16 feet bgs. MMS set the 2-inch PVC well casing at a total depth of 14 feet bgs with a 10-foot screen (screened from 4 to 14 feet bgs). Headspace field screening of subsurface soil samples with a PID did not detect any VOCs above background values. At 1605 hours, MMS completed pouring sand into the well annulus and began equipment decon.

At 1800 hours, MMS began drilling at deep well location **NG3MW25B** using the 12-inch OD HSA (8-inch ID). Upon reaching a total depth of 15 feet bgs, MMS set the 8-inch-diameter PVC surface casing (Appendix A, Photograph 23). At 1900 hours, MMS grouted the surface casing annulus (Appendix A, Photograph 24).

At 1910 hours, EA departed the site.

2.4 Site Activities – 24 May 2007

At 0800 hours, EPA and EA arrived at the Gulfco site. Following equipment decon, MMS mobilized the truck rig to shallow well location **OMW20**; however, the truck rig became mired in the wet marshy area and had to be pulled out using the buggy rig and support vehicle. Once the truck rig was pulled out, MMS transferred tools and supplies to the buggy rig for drilling operations.

Weather: clear to partly cloudy, 10 – 15 mph southerly winds, slightly humid with temperature ranging from 75 - 80°F.

At 1050 hours, MMS began pushing 5-foot core barrels at shallow well location **OMW20** (Appendix A, Photographs 25 – 26). Upon reaching a depth of 15 feet bgs, PBW examined the lithologic samples (Appendix A, Photographs 27 – 28). PBW directed MMS to push the core barrel string down another 2½ feet to 17 feet bgs. PBW noted that the top of the confining clay was at about 15 feet bgs. PBW directed MMS to auger down to a total depth of 16 feet bgs, and set the bottom of the 10-foot screen at 16 feet bgs. After filling the annulus with sand and bentonite, MMS placed a section of 8-inch-diameter surface casing around the open borehole to prevent surface water infiltration (Appendix A, Photograph 29). Installation of OMW20 was completed at 1250 hours.

At 1425 hours, MMS began drilling at deep well location **OMW26B** using the 12-inch OD HSA (8-inch ID); OMW26B is located immediately adjacent to OMW20, which was installed that morning. MMS drilled to a total depth of 16 feet bgs and set the 8-inch-diameter surface casing at 17 feet bgs (Appendix A, Photographs 30 – 32). MMS then grouted the casing annulus using a tremie pipe (Appendix A, Photograph 33). Installation of the surface casing for OMW26B was completed at 1630 hours.

At 1725 hours, EA departed the site.

2.5 Site Activities – 25 May 2007

At 0800 hours, EA arrived at the Gulfco site and PBW conducted a safety briefing.

Weather: cloudy, early morning light rain, 10 – 15 mph southerly winds, humid with temperature ranging from 70 - 75^{o}F.

At 0935 hours, MMS began pushing 5-foot core barrels at shallow well location **NC2MW28A** (Appendix A, Photographs 35 – 36). Upon reaching a depth of 15 feet bgs, PBW examined the lithologic samples (Appendix A, Photograph 37). PBW directed MMS to set the bottom of the 10-foot screen at 15 feet bgs. After filling the annulus with sand and bentonite, MMS placed a section of 8-inch-diameter surface casing around the open borehole to prevent surface water infiltration.

At 1310 hours, MMS began drilling at deep well location **NC2MW23B** using the 12-inch OD HSA (8-inch ID); NC2MW23B is located immediately adjacent to NC2MW28A, which was installed that morning. MMS drilled to a total depth of 15 feet bgs and set the 8-inch-diameter surface casing (Appendix A, Photograph 38). MMS then grouted the casing annulus using a tremie pipe (Appendix A, Photograph 39). Installation of the surface casing for NC2MW23B was completed at 1520 hours.

At 1630 hours, EA departed the site to return to Dallas, Texas.

2.6 Site Activities – 29 May 2007

At 1220 hours, EA arrived at the Gulfco site. PBW was conducting a STAC meeting with MMS' second drilling crew. MMS' first drilling crew was setting up at OMW27B to drill deeper within the surface casing that was set and grouted the previous week. Following the STAC meeting, MMS' second crew began setting up at ND4MW24B to drill deeper within the surface casing that was set and grouted the previous week.

Weather: clear/sunny to partly cloudy, early morning light rain, 5 – 10 mph winds out of south/southeast, temperature ranging from 70 - 75°F.

At 1340 hours, MMS began drilling within the 8-inch surface casing of **ND4MW24B** using the smaller 8-inch OD HSA (4¼-inch ID) (Appendix A, Photographs 40 – 41). Using 5-foot core barrels, MMS collected lithologic samples from 19 – 34 feet bgs. Based upon examination of lithology from this and previous wells, PBW directs MMS to set ND4MW24B as follows:

- Fill the borehole with hydrated bentonite from 27 – 34 feet bgs
- Set the bottom of the 5-foot well screen (2-inch-diameter PVC with 0.010-inch slots) at 26.5 feet bgs with a ½-foot silt trap below that, for a total depth of 27 feet bgs (Appendix A, Photograph 42).

While EA performed oversight of ND4MW24B installation, MMS' other drill crew installed **OMW27B**, which was drilled to a total depth of 30 feet bgs (Appendix A, Photographs 43 – 44). MMS set the 10-foot screen (2-inch-diameter PVC with 0.010-inch slots) from 20 – 30 feet bgs.

While MMS was resolving some equipment issues at ND4MW24B, EA inspected recently installed well pairs NC2MW28A/NC2MW23B and OMW20/OMW26B (Appendix A, Photographs 45 – 46). EA observed about 1 foot of standing water over wells NC2MW28A and NC2MW23B.

At 1715 hours, MMS completed installation of ND4MW24B.

At 1820 hours, EA departed the site.

2.7 Site Activities – 30 May 2007

At 0800 hours, EA arrived at the Gulfco site.

Weather: clear/sunny to partly cloudy, 5 mph winds out of southeast, humid with temperature about 85°F.

One of the MMS crews began setting up the truck-mounted rig at shallow well location NB4MW18. The other crew began setting up the buggy rig at NG3MW25B to drill deeper within the surface casing that was set and grouted the previous week.

At 0940 hours, MMS began pushing 5-foot core barrels at **NB4MW18** (Appendix A, Photograph 47). Upon reaching a depth of 15 feet bgs, PBW examined the lithologic samples. PBW directed MMS to continue drilling to 19 feet bgs and backfill the borehole with bentonite to 18 feet bgs. MMS then set the bottom of the 10-foot screen (2-inch-diameter PVC with 0.010-inch slots) at 18 feet bgs (Appendix A, Photograph 48). EA noted that MMS personnel were handling the PVC well casing without wearing nitrile gloves. At 1055 hours, MMS backfilled the annulus with sand from total depth to 6 feet bgs, followed by bentonite from 4 – 6 feet bgs and grout from surface to 4 feet bgs.

At 1115 hours, EA relocated to the deep well location **NG3MW25B**, where MMS had already drilled deeper within the 8-inch-diameter surface casing that was set and grouted the previous week (Appendix A, Photograph 49). At a depth of 32 feet bgs, MMS encountered the tight clay underlying the Zone B sand. Upon evaluating the lithologic samples collected from 16 – 32 feet bgs, PBW directed MMS to set the 10-foot screen (2-inch-diameter PVC with 0.010-inch slots) from 16 – 26 feet bgs (Appendix A, Photographs 50 – 51). Headspace readings collected from subsurface soil samples using the PID did not exceed 1 part per million (ppm) above the background values.

At 1355 hours, MMS installed shallow well **SA4MW22** with the buggy rig. PBW directed MMS to drill down to a total depth of 15 feet bgs and set the 10-foot well screen (2-inch-diameter PVC with 0.010-inch slots) from 5 – 15 feet bgs (Appendix A, Photographs 52 – 53). At 1440 hours, MMS mobilized the rig to the decon area.

At approximately 1515 hours, MMS set up the buggy rig on **OMW26B** to drill deeper within the surface casing that was set and grouted the previous week (Appendix A, Photographs 54 – 55). Upon evaluating the lithologic samples collected from 17 – 40 feet bgs, PBW established that they had not encountered the Zone B aquifer in this area of the site (Appendix A, Photograph 56). EPA and PBW discussed whether to P&A well OMW26B, since no definable Zone B sand had been encountered at a depth interval of 20 – 25 feet bgs—only tight clays. According to PBW, if any other sand interval were encountered in this vicinity, it would be difficult to correlate with other Zone B wells; in addition, analytical data would not be relevant with regard to contaminant transport within the Zone B sand. At 1805 hours, PBW then directed MMS to grout the borehole to total depth. MMS partially grouted the borehole with the augers in place; however, MMS did not have sufficient materials on the service truck to complete grouting activities. MMS would complete grouting activities at this well the following day.

At 1930 hours, EA departed the site.

2.8 Site Activities – 31 May 2007

At 0800 hours, EA and EPA arrived at the Gulfco site. According to PBW, one MMS crew would continue drilling activities while the other would work on surface completions. PBW collected an equipment rinsate blank sample from one of the decontaminated 5-foot-long core barrels (Appendix A, Photograph 57).

Weather: clear/sunny to partly cloudy, 5 - 10 mph southerly winds, slightly humid with temperature about 80°F.

While MMS prepared for scheduled activities, EPA, PBW, and EA reconnoitered an alternate (drier) location for ND3MW29A, which was relocated just north of the former proposed location (low muddy area).

At 1000 hours, MMS completed grouting activities at OMW26B. EA inspected the surface completion (concrete pad and protective steel housing) that MMS had just constructed at NB4MW18 (Appendix A, Photograph 58).

At 1010 hours, MMS set up the buggy rig at **NC2MW23B** to drill deeper within the surface casing that was set and grouted the previous week (Appendix A, Photograph 59). Upon evaluating the lithologic samples collected from 15 – 40 feet bgs, PBW established that they had not encountered the Zone B aquifer in this area of the site (Appendix A, Photograph 60). At 1333 hours, PBW directed MMS to plug and abandon (P&A) well NC2MW23B.

From 1350 – 1430 hours, EA inspected the surface completions for well pair NG3MW19 and NG3MW25B (Appendix A, Photograph 61).

At approximately 1500 hours, MMS completed P&A of NC2MW23B (Appendix A, Photograph 62) and mobilized equipment back to the decon area.

At 1530 hours, while MMS was setting up the truck-mounted rig at shallow well location ND3MW29A, EA continued its inspection of surface completions, including well pairs OMW20/OMW26B and NC2MW28A/NC2MW23B (Appendix A, Photographs 63 – 64); deep wells OMW26B and NC2MW23B had both been P&Aed.

At 1615 hours, MMS began installation of shallow well **ND3MW29A** (Appendix A, Photograph 65). Upon evaluating the lithologic samples collected from 0 – 17½ feet bgs, PBW directed MMS to set the 10-foot well screen (2-inch-diameter PVC with 0.010-inch slots) from 7½ – 17½ feet bgs. Headspace field screening of subsurface soil samples collected from ND3MW29A with a PID detected VOCs at 884 ppm in the underlying silty clay (16 feet bgs) and 585 ppm in the sand interval (12½ – 13½ feet bgs) (Appendix A, Photograph 66). During lithologic sampling, PBW noted a discolored dark brown sand interval (strong hydrocarbon odor and visible sheen) from 12½ – 17½ feet bgs (Appendix A, Photographs 67 – 68). PBW collected a soil sample from the upper half of this interval for laboratory analysis for VOCs, SVOCs, and pesticides (Appendix A, Photographs 69 – 70); EA had not been tasked with obtaining any split soil samples. PBW suspects the presence of non-aqueous phase liquid (NAPL), especially since the well is located near the south corner of the capped impoundment.

At 1830 hours, PBW collected an equipment rinsate blank sample following decontamination of the drilling equipment. PBW informed EA that well development activities would be conducted

beginning the following day and through the weekend; ground water sampling activities were scheduled to begin on Monday, 4 June 2007.

At 1900 hours, EA departed the site.

2.9 Site Activities – 1 June 2007

At 0830 hours, EA arrived at the Gulfco site. PBW discussed proposed activities, which included gauging ND3MW29A with an interface probe to establish the thickness of any NAPL present within the well. If NAPL was present, PBW would postpone well development until a sample could be collected for laboratory analysis.

Weather: clear/sunny to partly cloudy, slight wind (about 5 mph) out of the southeast, humid with temperature about 80°F.

At 0845 hours, PBW conducted a safety briefing. PBW contacted EPA to discuss a potential field change (NAPL sampling). Mark Kelly (EA) contacted Luis Vega (EA project manager) to determine if EA should obtain a split sample of the NAPL.

At 0920 hours, while MMS staged investigation-derived waste drums, EA and PBW inspected **ND3MW29A**. Using a PID, PBW recorded measurements of 8 ppm in the breathing zone above the open well casing and 135 ppm within the well casing (Appendix A, Photograph 71). PBW then gauged the well using a Solinst interface probe (Model No. 212) (Appendix A, Photograph 72). The depth to water was 3.36 feet below the top of casing (btoc); however, neither a light NAPL (LNAPL) nor dense NAPL (DNAPL) layer was detected with the probe down to a total depth of 18.40 feet btoc. Using a disposable bailer, PBW collected a sample from the bottom of the water column (at total depth), where DNAPL would be expected. The bailer contained a silty brown liquid; however, there was no indication of the presence of any NAPL as was observed the previous day (no visible sheen) (Appendix A, Photographs 73 – 74). After emptying the contents of the bailer into a 5-gallon bucket, a mild hydrocarbon odor was apparent; however, the PID only recorded 14 ppm VOCs within the bucket. Based on these observations, PBW decided against collecting an analytical sample at this time, and to develop the well as originally planned.

At 1048 hours, PBW gauged well **SA4MW22**; depth to water was 5.72 feet btoc. At 1101 hours, PBW began developing the well using a diaphragm pump (Appendix A, Photograph 75). During well development, PBW would periodically collect water quality parameters using a YSI® water quality meter (Model No. 556MPS) and a Hach® turbidimeter (Model No. 2100P) (Appendix A, Photograph 76). After pumping out each single well volume (about 2 – 2½ gallons), PBW would allow the water level in the well to recover. Upon re-initiating pumping, PBW would record ground water quality readings. According to PBW, well development of SA4MW22 was considered complete after pumping out about 20 gallons of ground water.

At 1425 hours, EA departed the site to return to Dallas, Texas.

3.0 GROUND WATER SAMPLING ACTIVITIES

From 4 – 6 June 2007, EA conducted oversight of the ground water sampling activities conducted by PBW and obtained split ground water samples as directed by EPA. Participants included:

- Mr. John Braden, PBW
- Mr. Mark Kelly, EA

Table 2 summarizes the ground water samples collected from 4 – 6 June 2007.

TABLE 2 GROUND WATER SAMPLE SUMMARY (4 – 6 JUNE 2007)

PBW Sample ID	WBZ	PBW Analytical Parameters	Date Collected	EA Split Sample Collection Time	EA Split Sample ID	EA Analytical Parameters
OMW27B	B	VOCs SVOCs Pesticides Metals	06/04/07	1400 hours	OMW27B	VOCs SVOCs Pesticides Metals
OMW21	A	VOCs Pesticides	06/04/07	1530 hours	OMW21	VOCs SVOCs Pesticides Metals
NC2MW28A	A	VOCs Pesticides	06/05/07	0930 hours	MW28A	VOCs SVOCs Pesticides Metals
ND4MW24B	B	VOCs SVOCs Pesticides Metals	06/05/07	- -	- -	- -
ND3MW29A	A	VOCs Pesticides	06/05/07	1615 hours	MW29	VOCs SVOCs Pesticides Metals
NG3MW19	A	VOCs SVOCs Pesticides Metals	06/06/07	- -	- -	- -
NG3MW25B	B	VOCs SVOCs Pesticides Metals TDS	06/06/07	- -	- -	- -

Notes:
- - Not applicable; EA was not tasked with obtaining a split sample for this well.
TDS Total dissolved solids

3.1 Site Activities – 4 June 2007

At 1040 hours, EA arrived at the Gulfco site and met with the PBW representative. EA and PBW began to prepare sample containers and documentation associated with scheduled sampling activities. PBW had procured an all-terrain utility vehicle to access the monitoring wells and transport sampling equipment and supplies.

Weather: clear/sunny, slight wind (about 5 – 10 mph) out of the southeast, humid with temperature about 85°F.

At 1305 hours, PBW gauged deep well **OMW27B** with a Keck® water level indicator; depth to water was 3.09 feet btoc. At 1312 hours, PBW initiated low-flow purging activities maintaining a flow rate of 0.2 liter per minute. Purging was accomplished with a Geotech® GeoPump 2 peristaltic sampling pump and Teflon® tubing; the pump intake (tubing) was set at the middle of the screen interval (Appendix A, Photograph 77). After 10 minutes of low-flow purging, PBW began monitoring water quality parameters at 5-minute intervals using a YSI® water quality meter (Model No. 556MPS) and a Hach® turbidimeter (Model No. 2100P). EA noted that the purge water from OMW27B was clear. At 1345 hours, PBW began sample collection at OMW27B; EA noted the split sample collection time as 1400 hours (Appendix A, Photograph 78). PBW collected ground water samples for VOC, SVOC, pesticides, and metals analyses at this well. EA obtained a split sample for the following laboratory analyses:

- VOCs (EPA SW-846 Method 8260B)
- SVOCs (EPA SW-846 Method 8270C)
- Pesticides (EPA SW-846 Method 8081A)
- Metals (EPA SW-846 Method 6010B/7470A)

Because the stabilized turbidity reading for OMW27B ground water did not exceed 10 nephelometric turbidity units (NTUs), PBW did not filter the metals aliquot (as per PBW's SAP). PBW and EA placed sample containers within a cooler containing bagged ice.

At 1430 hours, PBW gauged shallow well **OMW21**; depth to water was 4.02 feet btoc. At 1440 hours, PBW initiated low-flow purging activities, as previously outlined. EA noted that the purge water was slightly cloudy. From 1510 – 1545 hours, PBW filled PBW and EA sample containers at OMW21; EA noted the split sample collection time as 1530 hours (Appendix A, Photograph 79). PBW only collected ground water samples for VOC and pesticides analyses at this well; however, EA obtained sufficient split sample volume for analysis for VOCs, SVOCs, pesticides, and metals. Because the stabilized turbidity reading for OMW21 ground water exceeded 10 NTUs, PBW filtered the split metals aliquot for EA using a Geotech® 10-micron (µm), high-capacity disposable filter (as per PBW's SAP) (Appendix A, Photograph 80). PBW and EA placed sample containers within a cooler containing bagged ice.

At 1650 hours, EA departed the site. EA then purchased and bagged additional ice for the sample coolers and completed the sample documentation. Upon arrival at the FedEx facility, EA sealed the sample coolers. At 1825 hours, EA relinquished the sample coolers to FedEx.

3.2 Site Activities – 5 June 2007

At 0800 hours, EA arrived at the Gulfco site and met with the PBW representative.

Weather: clear/sunny, wind (about 5 – 10 mph) out of the northwest, humid with temperature about 85°F.

At 0825 hours, PBW gauged shallow well **NC2MW28A**; depth to water was 2.57 feet btoc. At 0833 hours, PBW initiated low-flow purging activities, as previously outlined (Appendix A, Photograph 81). EA noted that the purge water initially contained elevated sediment content, which eventually became clearer. From 0858 – 0937 hours, PBW filled PBW and EA sample containers at NC2MW28A; EA noted the split sample collection time as 0930 hours (Appendix A, Photograph 82). PBW only collected ground water samples for VOC and pesticides analyses at this well; however, EA obtained sufficient split sample volume for analysis for VOCs, SVOCs, pesticides, and metals. Because the stabilized turbidity reading for NC2MW28A ground water exceeded 10 NTUs, PBW filtered the split metals aliquot for EA using a 10-µm filter (as per PBW's SAP). PBW and EA placed sample containers within a cooler containing bagged ice.

At 1000 hours, PBW gauged deep well **ND4MW24B**; depth to water was 3.66 feet btoc. At 1020 hours, PBW initiated low-flow purging activities, as previously outlined (Appendix A, Photograph 83). From 1041 – 1125 hours, PBW filled PBW sample containers at ND4MW24B. PBW collected ground water samples (including a field duplicate) for VOC, SVOC, pesticides, and metals analyses at this well (Appendix A, Photograph 84). EA was not tasked with obtaining a split sample at this location. Because the stabilized turbidity reading for ND4MW24B ground water exceeded 10 NTUs, PBW filtered the metals aliquot using a 10-µm filter (as per PBW's SAP). PBW placed sample containers within a cooler containing bagged ice.

At 1230 hours, a storm front moved through the area resulting in light rain and thunder/lightning. PBW decided to postpone additional sampling activities until the weather improved.

At 1420 hours, the EA project manager contacted the onsite EA representative to discuss split sampling requirements at **ND3MW29A** (suspected NAPL). Per direction from EPA, EA should obtain the following split samples:

- If LNAPL is present, obtain a split sample for VOC analysis
- Obtain split sample of low-flow ground water sample for analysis for VOCs, SVOCs, pesticides, and metals
- If DNAPL is present, obtain a split sample for VOC analysis.

- In the case of limited volume availability, PBW should have priority in terms of fulfilling their sample volume requirements.

At approximately 1500 hours, PBW gauged shallow well **ND3MW29A** using a Heron® interface probe. The interface probe indicated the presence of LNAPL at a depth of 3.79 feet btoc, with depth to underlying water at 4.31 feet btoc; consequently, PBW used a disposable bailer to obtain a sample (Appendix A, Photograph 85). PBW and EA could not recognize any indication of LNAPL in the sample bailer; the contents of the bailer had the appearance of a light-brown tinted, transparent liquid. Upon re-gauging the well, the interface probe indicated LNAPL at a depth of 4.65 feet btoc, with depth to underlying water at 5.20 feet btoc (Appendix A, Photograph 86). PBW repeated the procedure with the bailer and interface probe to verify that LNAPL was not present within ND3MW29A. PBW and EA speculated that a difference in salinity, conductivity, pH, or other water quality parameter may be creating a layering effect that is registering on the interface probe as a LNAPL-water interface.

At 1516 hours, PBW initiated low-flow purging activities at **ND3MW29A**, as previously outlined (Appendix A, Photograph 87). From 1533 – 1615 hours, PBW filled PBW and EA sample containers at ND3MW29A; EA noted the split sample collection time as 1615 hours. PBW only collected ground water samples for VOC and pesticides analyses at this well; however, EA obtained sufficient split sample volume for analysis for VOCs, SVOCs, pesticides, and metals. Because the stabilized turbidity reading for ND4MW29A ground water exceeded 10 NTUs, PBW filtered EA's metals aliquot using a 10-µm filter (as per PBW's SAP). PBW also collected a field blank at ND4MW29A, and an equipment rinsate blank on the water level indicator. PBW and EA placed sample containers within a cooler containing bagged ice.

At 1630 hours, PBW and EA departed the site. EA then purchased and bagged additional ice for the sample coolers and completed the sample documentation. Upon arrival at the FedEx facility, EA sealed the sample coolers. At 1825 hours, EA relinquished the sample coolers to FedEx.

3.3 Site Activities – 6 June 2007

At 0800 hours, EA arrived at the Gulfco site and met with the PBW representative. PBW's surveyors were also on site to survey top of casing and ground surface elevations for the newly installed monitoring wells, as well as the two deep wells that were P&Aed. PBW informed EA that local media representative may visit the site in addition to Dow public relations representatives.

Weather: clear/sunny to partly cloudy, wind (about 5 – 10 mph) out of the southeast, humid with temperature ranging from 75 – 80°F.

At about 0830 hours, PBW gauged shallow well **NG3MW19**; depth to water was 3.31 feet btoc. At 0849 hours, PBW completed low-flow purging activities, as previously outlined (Appendix A, Photograph 88). From 0855 – 0900 hours, PBW collected a ground water sample for analysis for VOCs, SVOCs, pesticides, and metals. EA was not tasked with obtaining a split sample at this location. Because the stabilized turbidity reading for NG3MW19 ground water exceeded 10

NTUs, PBW filtered the split metals aliquot using a 10-µm filter (as per PBW's SAP). PBW placed sample containers within a cooler containing bagged ice.

At 0925 hours, PBW set up at deep well **NG3MW25B**; depth to water was gauged at 2.99 feet btoc. At 0937 hours, PBW initiated low-flow purging activities, as previously outlined (Appendix A, Photograph 89). From 1002 – 1045 hours, PBW collected a ground water sample for analysis for VOCs, SVOCs, pesticides, metals, and TDS; PBW also collected additional matrix spike, matrix spike duplicate, and matrix duplicate sample volumes at this sampling location (Appendix A, Photograph 90). EA was not tasked with obtaining a split sample at this location. Because the stabilized turbidity reading for NG3MW25B ground water exceeded 10 NTUs, PBW filtered the metals aliquot using a 10-µm filter (as per PBW's SAP). PBW placed sample containers within a cooler containing bagged ice. PBW informed EA of their intent to collect an additional round of measurements from all onsite wells later the same day.

At 1115 hours, EA departed the site to return to Dallas, Texas.

REFERENCES

Pastor, Behling & Wheeler, LLC (PBW). 2005. "Remedial Investigation and Feasibility Study (RI/FS) Work Plan for the Gulfco Marine Maintenance Superfund Site, Freeport, Texas." May.

PBW. 2006. "Sampling and Analysis Plan – Volume 1. Field Sampling Plan for the Gulfco Marine Maintenance Superfund Site, Freeport, Texas." May.

PBW. 2007. Memorandum to Mr. Gary Miller, U.S. Environmental Protection Agency (U.S. EPA): "Groundwater Data, Gulfco Marine Maintenance Site, Freeport, Texas." 19 January.

U.S. EPA. 2007. Memorandum to Mr. Eric Pastor, PBW: "Groundwater Data and Proposed Monitoring Wells, Gulfco Marine Maintenance Superfund Site, Freeport, Texas, Unilateral Administrative Order, CERCLA Docket No. 06-05-05." 14 February.

Appendix A

Photographs

Note: Because the digital camera was not updated to Daylight Savings Time, the time stamp on each of the following photographs reflects Standard Time (1 hour earlier than the actual time the photograph was taken during the field event).

Photograph 1 Date: 21 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Buggy hollow-stem auger (HSA) rig sets up to install well **OMW21**

Photograph 2 Date: 21 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Buggy HSA rig installing **OMW21**

Photograph 3 Date: 21 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Core sample from **OMW21**

Photograph 4 Date: 21 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: **OMW21**

Photograph 5 Date: 21 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Pastor, Behling & Wheeler, LLC (PBW) using photo-ionization detector (PID) to monitor volatile organic compounds (VOCs) at **OMW21**

Photograph 6 Date: 21 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Setting 10-foot screen at **OMW21** (2-inch-diameter polyvinyl chloride [PVC] with 0.010-inch slots)

Photograph 7 Date: 21 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Pouring sand around well annulus at **OMW21**

Photograph 8 Date: 22 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Clearing water and mud around **OMW21**

Photograph 9 Date: 22 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Additional coupling to extend **OMW21** above ground surface

Photograph 10 Date: 22 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: **OMW21** (shallow Zone A well)

Photograph 11 Date: 22 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Buggy HSA rig setting up at **OMW27B** (deep Zone B well)

Photograph 12 Date: 22 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Buggy HSA rig drilling **OMW27B**

Photograph 13 Date: 22 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Preparing to install 18 feet of surface casing at **OMW27B** (8-inch-diameter PVC casing)

Photograph 14 Date: 22 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Preparing to grout surface casing at **OMW27B**

Photograph 15 Date: 22 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Applying additional grout at **OMW21**

Photograph 16 Date: 23 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Truck-mounted HSA rig setting up at **ND4MW24B** (deep Zone B well)

Photograph 17 Date: 23 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Drilling **ND4MW24B**

Photograph 18 Date: 23 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Setting 19 feet of surface casing at **ND4MW24B** (8-inch-diameter PVC casing)

Photograph 19 Date: 23 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Grouting surface casing at **ND4MW24B**

Photograph 20 Date: 23 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Truck-mounted HSA rig setting up at **NG3MW19** (shallow Zone A well)

Photograph 21 Date: 23 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Drilling **NG3MW19**

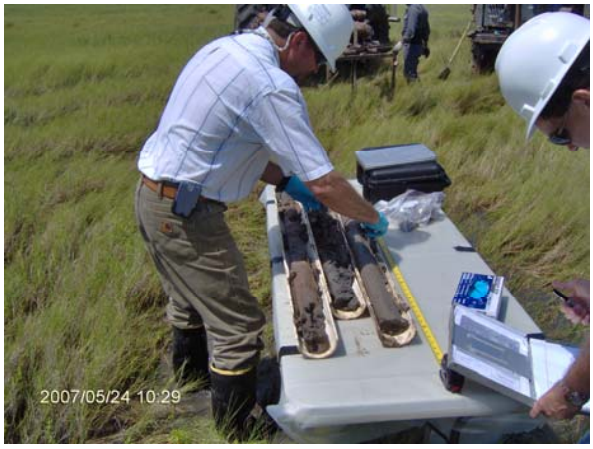
Photograph 22 Date: 23 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Logging soil cores at **NG3MW19**

Photograph 23 Date: 23 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Setting 15 feet of surface casing at **NG32MW25B** (deep Zone B well)

Photograph 24 Date: 23 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Grouting surface casing at **NG32MW25B**

Photograph 25 Date: 24 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Buggy HSA rig setting up at **OMW20**

Photograph 26 Date: 24 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Drilling at **OMW20** (shallow Zone A well)



Photograph 27 Date: 24 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Logging cores at **OMW20**

Photograph 28 Date: 24 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Logging cores at **OMW20**

Photograph 29 Date: 24 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Protective surface casing at **OMW20** to prevent surface water infiltration

Photograph 30 Date: 24 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Setting 17 feet of surface casing at **OMW26B** (shallow Zone A well)

Photograph 31 Date: 24 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Setting surface casing at **OMW26B**

Photograph 32 Date: 24 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Surface casing at **OMW26B** (8-inch-diameter)

Photograph 33 Date: 24 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Grouting surface casing at **OMW26B** using a tremie pipe

Photograph 34 Date: 25 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Equipment decontamination area

Photograph 35 Date: 25 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Setting up HSA buggy rig at **NC2MW28A**

Photograph 36 Date: 25 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Drilling at **NC2MW28A** (shallow Zone A well)

Photograph 37 Date: 25 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Logging cores at **NC2MW28A**

Photograph 38 Date: 25 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Setting surface casing at **NC2MW23B**

Photograph 39 Date: 25 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Grouting surface casing at **NC2MW23B** (right); new well **NC2MW28A** is visible at left

Photograph 40 Date: 29 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Drilling **ND4MW24B** (deep Zone B well); existing well **ND4MW03** is visible in the foreground

Photograph 41 Date: 29 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Drilled deeper within 8-inch-diameter surface casing at **ND4MW24B**

Photograph 42 Date: 29 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Setting well casing at **ND4MW24B** (2-inch-diameter PVC)

Photograph 43 Date: 29 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Second crew installing **OMW27B** with buggy HSA rig (deep Zone B well)

Photograph 44 Date: 29 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Grouting well casing at **OMW27B** using a tremie pipe

Photograph 45 Date: 29 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Shallow well **NC2MW28A** (foreground) and deep well **NC2MW23B** (background)

Photograph 46 Date: 29 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Deep well **OMW26B**

Photograph 47 Date: 30 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Truck-mounted rig drilling **NB4MW18** (shallow Zone A well)

Photograph 48 Date: 30 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Setting well screen and casing at **NB4MW18**

Photograph 49 Date: 30 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Buggy HSA rig drilling deeper within surface casing at **NG3MW25B**

Photograph 50 Date: 30 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Logging cores at **NG3MW25B**

Photograph 51 Date: 30 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Preparing to set well screen and casing at **NG3MW25B**

Photograph 52 Date: 30 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Logging cores at **SA4MW22** (shallow Zone A well)

Photograph 53 Date: 30 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Filling well annulus with sand at **SA4MW22**

Photograph 54 Date: 30 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Setting up buggy HSA rig at **OMW26B**

Photograph 55 Date: 30 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Drilling deeper within surface casing at **OMW26B**

Photograph 56 Date: 30 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Logging cores at **OMW26B**

Photograph 57 Date: 31 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: PBW collecting equipment rinsate blank from decontaminated, 5-foot-long core barrel

Photograph 58 Date: 31 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: New surface completion at **NB4MW18**

Photograph 59 Date: 31 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Drilling deeper within surface casing at **NC2MW23B**

Photograph 60 Date: 31 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Logging cores at **NC2MW23B**

Photograph 61 Date: 31 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Surface completions for **NG3MW25B** (left) and **NG3MW19** (right)

Photograph 62 Date: 31 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: **NC2MW23B** following plugging and abandonment (P&A) activities

Photograph 63 Date: 31 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Surface completion for **OMW20**

Photograph 64 Date: 14 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Preparing surface completion for well **NC2MW28A**

Photograph 65 Date: 31 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Drilling **ND3MW29A** (shallow Zone A well)

Photograph 66 Date: 31 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Headspace field screening of soil with PID

Photograph 67 Date: 31 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Non-aqueous phase liquid (NAPL) residue visibly evident within core barrel at **ND3MW29A**

Photograph 68 Date: 31 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Lithologic samples from **ND3MW29A**; note visible NAPL in soil core sample on far right

Photograph 69 Date: 31 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: PBW collecting analytical soil sample using EnCore sampler (VOC analysis) (**ND3MW29A**)

Photograph 70 Date: 31 May 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: PBW collecting analytical soil sample using EnCore sampler (VOC analysis) (**ND3MW29A**)

Photograph 71 Date: 1 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Air monitoring at **ND3MW29A** with PID

Photograph 72 Date: 1 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Gauging **ND3MW29A** with interface probe

Photograph 73 Date: 1 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Collecting sample from **ND3MW29A** using disposable bailer; presence of NAPL not evident

Photograph 74 Date: 1 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Sample of ground water collected from **ND3MW29A** (for visual inspection only)

Photograph 75 Date: 1 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Developing **SA4MW22** using diaphragm pump

Photograph 76 Date: 1 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Measuring water quality at **SA4MW22** during development activities

Photograph 77 Date: 4 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Low-flow ground water sampling at **OMW27B**

Photograph 78 Date: 4 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Collecting analytical samples at **OMW27B**

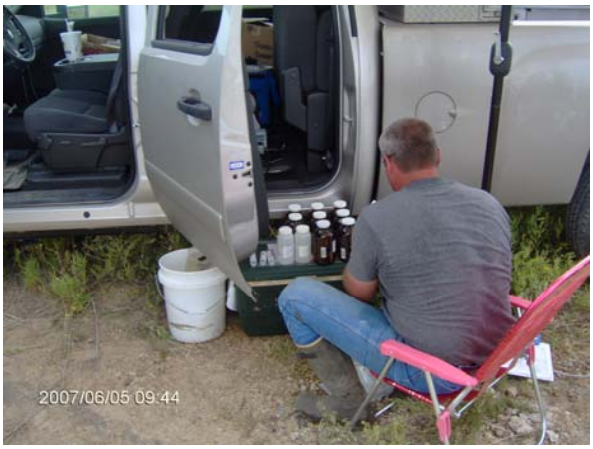
Photograph 79 Date: 4 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Low-flow ground water sampling at **OMW21**

Photograph 80 Date: 4 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Collecting analytical samples at **OMW21**; using 10-µm filter to collect metals aliquot

Photograph 81 Date: 5 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Low-flow ground water sampling at **NC2MW28A**

Photograph 82 Date: 5 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Collecting analytical samples at **NC2MW28A**

Photograph 83 Date: 5 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Low-flow ground water sampling at **ND4MW24B**



Photograph 84 Date: 5 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Collecting analytical samples at **ND4MW24B**

Photograph 85 Date: 5 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Collecting sample from **ND3MW29A** using disposable bailer (for visual inspection only)

Photograph 86 Date: 5 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Gauging **ND3MW29A** using an interface probe

Photograph 87 Date: 5 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Low-flow ground water sampling at **ND3MW29A**

Photograph 88 Date: 6 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Low-flow ground water sampling at **NG3MW19**

Photograph 89 Date: 6 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Low-flow ground water sampling at **NG3MW25B**

Photograph 90 Date: 6 June 2007
Site: Gulfco Marine Maintenance Superfund Site
Description: Collecting analytical samples at **NG3MW25B**